

Notice of Allowability

Application No.

10/501,339

Examiner

Aaron J. Kosar

Applicant(s)

BRU MARTINEZ ET AL.

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Interview Summary.
2. ☒ The allowed claim(s) is/are 1-5 and 21.
3. ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some* c) ☐ None of the:
- ☒ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
- (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
- 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
- (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|---|
| 1. <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 5. <input type="checkbox"/> Notice of Informal Patent Application |
| 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 6. <input checked="" type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date <u>7/17/2007</u> |
| 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>3/30/2005</u> | 7. <input checked="" type="checkbox"/> Examiner's Amendment/Comment |
| 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit
of Biological Material | 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance |
| | 9. <input type="checkbox"/> Other _____ |

EXAMINER'S AMENDMENT

Authorization for this examiner's amendment was given in a telephone interview with Applicant's representative, Dawn Russell, on July 17, 2007.

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

The application has been amended as follows:

Claims

1. A method for producing *trans*-resveratrol, by inducing the synthesis of or by accumulating *trans*-resveratrol in a culture of cells that naturally produce *trans*-resveratrol, consisting of incubating the cells in suspension in a culture medium in the presence of a randomly methylated β -cyclodextrin (RMBCD) with a degree of substitution ranging from 11 to 13 under conditions that allow for *trans*-resveratrol synthesis and excretion into the culture medium and isolating the *trans*-resveratrol from the culture medium.

2. The method according to claim 1, in which the cells that naturally produce *trans*-resveratrol are selected from the group consisting of *Pinus sibirica*, *Pinus sylvestris*, *Gnetum parviflorum*, *Vitis vinifera*, *Polygonum cuspidatum*, *Arachis hypogaea*, *Eucaliptus sp.*, *Artocarpus lakoocha*, *Nothofagus fusca*, *Phoenix dactilifera*, *Festuca versuta*, *Carex fedia*, and *Veratrum grandiflorum*.

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3. The method according to claim 1, in which the RMBCD with a degree of substitution ranging from 11 to 13 is a cyclic maltooligosaccharide consisting of 7 D-glucose units bound by $\alpha(1\rightarrow4)$ glucoside bonds and whose hydroxyl groups in positions 2, 3, and 6 of the D-glucose units may be free or derivatized by methylation, and having 11 to 13 methoxy groups per cyclodextrin ring.

4. The method according to claim 3, in which the RMBCD with a degree of substitution ranging from 11 to 13 is the randomly methylated β -cyclodextrin having a degree of substitution ranging from 12 to 13 (RAMEB) or is CAVASOL® W7 M.

5. The method according to claim 1, in which the cells producing *trans*-resveratrol are cells from *Vitis vinifera*, wherein the culture medium comprises a liquid medium, with an auxin and cytokinin hormone, in the presence of the RMBCD with a degree of substitution ranging from 11 and 13, and wherein the incubation is performed with orbital shaking, at a temperature ranging from 20°C to 28°C, and under a photoperiod of 0 to 16 hours of light and 8 to 24 hours in the dark.

6-20. (cancelled)

21. The method according to claim 5 wherein the auxin is α -naphthaleneacetic acid and the cytokinin is kinetin.

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The following is an examiner's statement of reasons for allowance: The prior art of BAKO (Bako, et al. Journal of Inclusion Phenomena and Molecular Recognition in Chemistry, (1994) 18, 207-314.) teaches the increased solubility of compounds using β -cyclodextrins (eg. hydrocortisone, table IV). MORALES (Morales, et al. PTO-1449: AM) teaches that the increased methylation of cyclodextrins increases solubilization of poorly soluble compounds and also teaches the use of dimethyl β -cyclodextrins (DIMEB) in resveratrol synthesis using *V.vinifera* cells; however, the prior art does not teach the unexpected results demonstrated by Applicant wherein the RMBCD having a degree of substitution ranging from 11-13 has greater *trans*-resveratrol synthesis versus other cyclodextrins including versus other methylated β -cyclodextrins with methylation greater than 13 (DIMEB: 14) or with methylation/alkylation less than 11 (HYPROB: 5-6; MALTOSYL: 1; BETA: 0)(See specification, page 14, table 1).

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

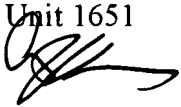
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Aaron J. Kosar whose telephone number is (571) 270-3054. The examiner can normally be reached on Monday-Thursday, 7:30AM-5:00PM, ALT. Friday, EST.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Aaron Kosar
Examiner
Art Unit 1651



SANDRA E. SAUCIER
PRIMARY EXAMINER

